

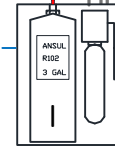
ALL FUSIBLE LINKS
RATED AT 360 DEG F

CONNECTION TO MAKE UP AIR FAN, SHUT DOWN UPON
ACTIVATION (CONNECTION BY OTHERS)

CONNECTION TO HORN STROBE / AUDIBLE DEVICE
OR F.A.C.P. ACTIVATES UPON SYSTEM DISCHARGE
(SUPPLIED & INSTALLED BY OTHERS)

MU

HS
AD

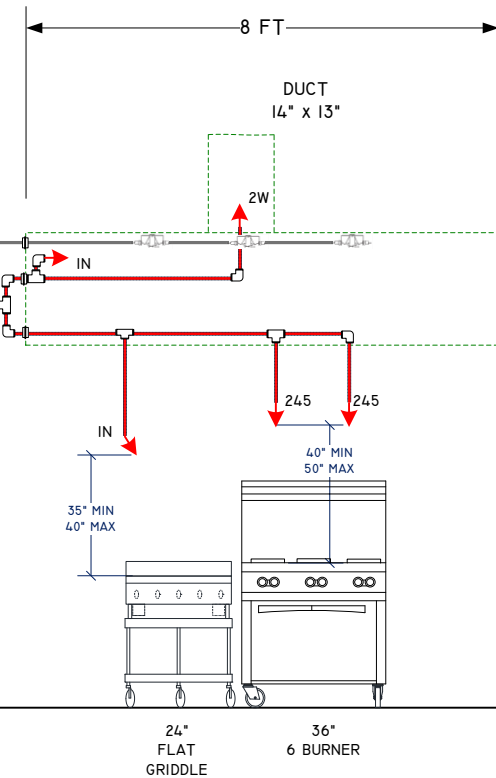


REMOTE PULL STATION

SHALL BE INSTALLED 42" - 48" ABOVE THE FINISHED
FLOOR AND A DISTANCE OF AT LEAST 10FT FROM THE
HAZARD BUT NOT MORE THAN 20FT. IT SHALL BE
INSTALLED IN THE PATH OF EXIT AND REQUIRE A
MAXIMUM FORCE OF 40 LBS AND A MAXIMUM MOVEMENT
OF 14" FOR ACTUATION

42" - 48"

MECHANICAL GAS VALVE INSTALLED
BEFORE FIRST APPLIANCE BY OTHERS



SEE NOZZLE DETAILS AND HEIGHTS ON PAGES 3 - 5



ANSUL R102 – 3 GALLON SYSTEM TANK 1 USES: 8 of 11 POINTS

REQUIREMENTS	SUPPLY LINE	DUCT BRANCH LINE	PLENUM BRANCH LINE	APPLIANCE BRANCH LINE
Pipe Size	3/8 in.	3/8 in.	3/8 in.	3/8 in.
Max Length	40 Ft	9 Ft	4 Ft	12 Ft
Max Rise	6 Ft	4 Ft	2 Ft	2 Ft
Max 90 Elbows	9	4	4	6
Max Tees	1	2	2	4
Max Flow Numbers	11 *	4	2	4

EXAMPLE DRAWINGS PROVIDED BY: <http://www.firesystemdrawings.com>



FIRE EQUIPMENT CONTRACTOR
345 6TH STREET, SUITE 600 BREMERTON, WA 98337
360-473-5290

SOME RESTAURANT
123 MAIN STREET
BREMERTON, WA 98337

SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	
SCALE	N/A	SHEET	1 OF 5

GENERAL NOTES:

1. System shall be Pre-Engineered
2. System shall be manufactured by ANSUL INC.
3. ANSUL R102 systems have the following Listings and Approvals:

Underwriters Laboratories Inc, UL 300 / UL 1254, UL EX 3470
4. System Temperature Limitations – 32F min / 120F Max
5. Installation requirements, nozzle limitations and design criteria shall comply with the ANSUL R102 Manual and all addendums as published by ANSUL
6. Pipe and fittings shall be Schedule 40 Black, Chrome Plated or Stainless. Galvanized Pipe Shall Not Be Used.
7. All required electrical work shall be performed by others and is not included on this shop drawing.
8. All required plumbing work be performed by others and is not included on this shop drawing

General Piping Requirements

1. All R-102 system piping is straight line. Therefore, the need for critical lengths and balancing is minimized.
2. Two 45° elbows count as one 90° elbow.
3. Each branch line includes the tee or elbow leading to it, and all fittings within the branch line itself.
4. The minimum piping length of Schedule 40, 3/8 in. pipe from the tank outlet to any nozzle protecting a range, fryer, or wok must be 6 ft. (1.8 m).
5. Pipe lengths are measured from center of fitting to center of fitting. See Figure 85.

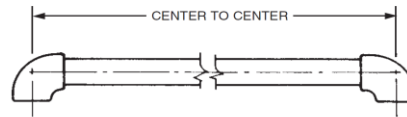
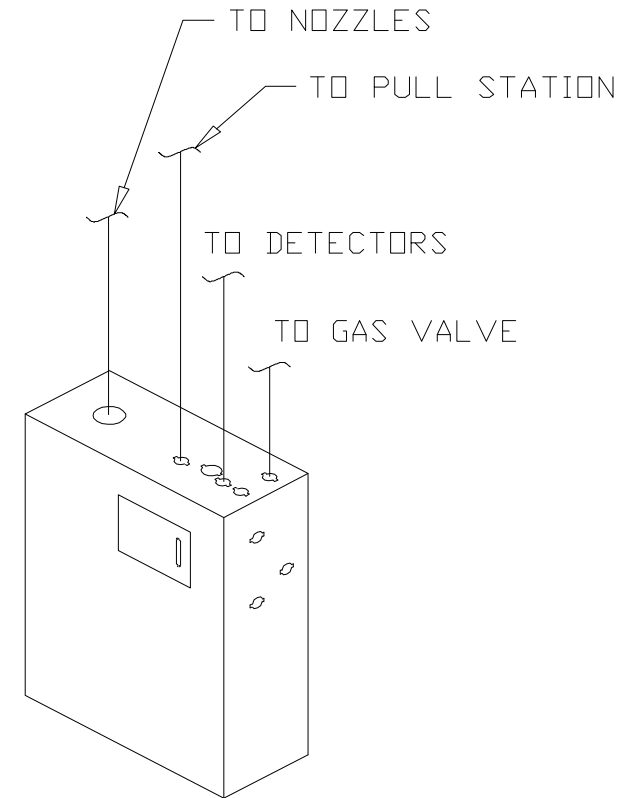


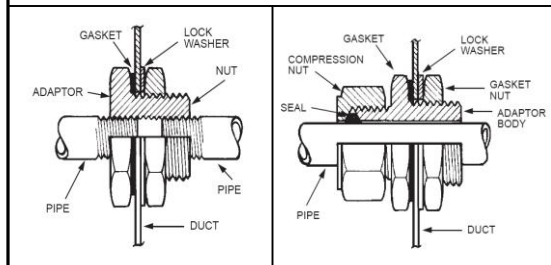
FIGURE 85
000778

6. All distribution piping must be 3/8 in. Schedule 40 black iron, chrome-plated, or stainless steel. **Do not use hot dipped galvanized pipe on the distribution piping.**
7. All threaded connections located in and above the protected area must be sealed with pipe tape. Tape should be applied to male threads only. Make certain tape does not extend over the end of the thread, as this could cause possible blockage of the agent distribution.
8. Before installing blow-off caps on nozzles, apply a small amount of Dow Corning No. 111 silicone grease across the opening in the nozzle tip and also a small amount coating the exterior of the blow-off cap. This will help keep cooking grease from building up on the cap.
9. Tees used in the distribution piping can be used as thru tees, side outlet tees, or bull tees.



3 GAL. SYSTEM DETAIL
N.T.S.

ALL PENETRATIONS TO THE HOOD SHALL BE SEALED WITH AN APPROVED QUICK SEAL DEVICE



TANK AND CARTRIDGE REQUIREMENTS

Once the hazard analysis is completed and the total nozzle flow numbers are established, the quantity and size of agent tanks and cartridges needed to supply the nozzles with the proper volumes of agent at the proper flow rates can be determined. For cartridges used in the regulated release mechanism, flow capacities, tank quantities and sizes, and regulated release cartridge options are given in the table below.

Total Flow Numbers*	Quantity and Size of Tank(s)	Regulated Release Cartridge Options	
		Nitrogen	Carbon Dioxide
1 – 5	(1) 1.5 Gallon	LT-20-R	101-10
6 – 11	(1) 3.0 Gallon	LT-30-R	101-20
11 – 16	(1) 1.5 Gallon	Double	101-30
	(1) 3.0 Gallon		
16 – 22	(2) 3.0 Gallon	Double	101-30**

When one or more regulated actuators are used, the following tank and cartridge combinations apply for each regulated actuator:

Regulated Actuator Tank(s)	Regulated Actuator Cartridge
(1) 1.5 Gallon	LT-20-R or 101-10
(1) 3.0 Gallon	LT-30-R or 101-20
(1) 1.5 Gallon and (1) 3.0 Gallon	LT-A-101-30 or 101-30** or double tank
(2) 3.0 Gallon	LT-A-101-30 or 101-30** or double tank



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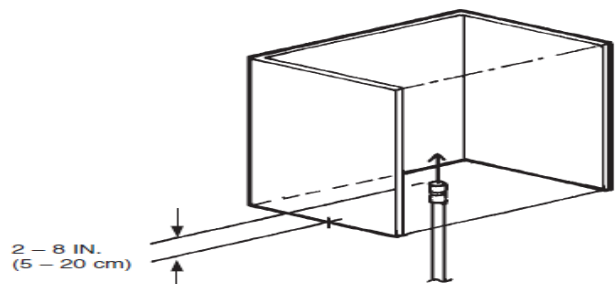
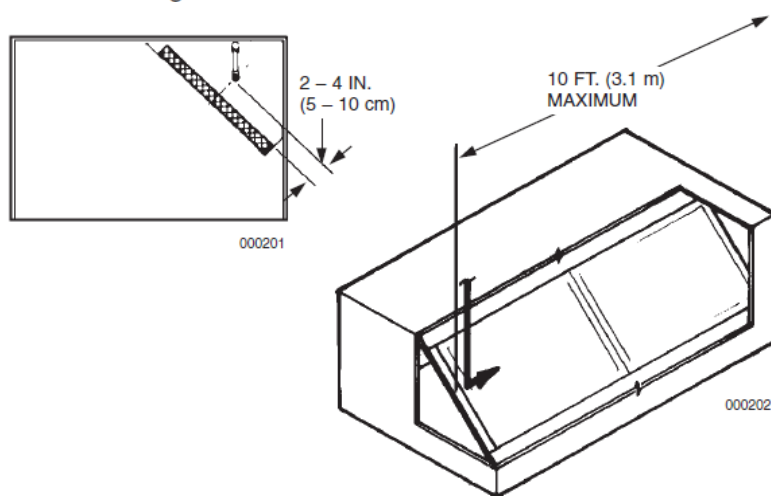
EXAMPLE DRAWINGS PROVIDED BY: <http://www.firesystemdrawings.com>

SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	
SCALE	N/A	SHEET	2 OF 5

HORIZONTAL PROTECTION – OPTION 1

1N NOZZLE – PART NO. 419335 – SINGLE BANK PROTECTION

One 1N nozzle will protect 10 linear feet (3.1 m) of single filter bank plenum. The nozzle(s) must be mounted in the plenum, 2 to 4 in. (5 to 10 cm) from the face of the filter, centered between the filter height dimension, and aimed down the length. The nozzle must be positioned 0-6 in. (0-15 cm) from the end of the hood to the tip of the nozzle. See Figure 9.



DUCT SIZES UP TO 100 IN. (254 cm)
PERIMETER/ 32 IN. (81.3 cm) DIAMETER

- One 2W Nozzle (Part No. 419337) = two flow numbers
- 100 in. (254 cm) perimeter maximum
- 32 in. (81.3 cm) diameter maximum

Description	Part No.	3.0 Gallon System
2W Nozzle	419337	Maximum 100 in. (254 cm) Perimeter

Nozzle Identification Chart

► **Note:** See Component Index for nozzle package shipping assembly by part numbers.

Nozzle Type	Nozzle Part No.	Nozzle* Stamping	Nozzle Flow No.	Nozzle Material
► 1W Nozzle	419336	1W**	1	Chrome-Plated Body
► 1N Nozzle	419335	1N**	1	Chrome-Plated Body
► 1/2N Nozzle	419334	1/2N	1/2	Chrome-Plated Body
► 3N Nozzle	419338	3N	3	Chrome-Plated Body
2W Nozzle	419337	2W	2	Chrome-Plated Body
230 Nozzle	419339	230	2	Chrome-Plated Body
245 Nozzle	419340	245	2	Chrome-Plated Body
260 Nozzle	419341	260	2	Chrome-Plated Body
290 Nozzle	419342	290	2	Chrome-Plated Body
2120 Nozzle	419343	2120	2	Chrome-Plated Body
1F Nozzle	419333	1F	1	Chrome-Plated Body

* Nozzle stamping may contain an additional letter indicating a vendor's code.

► **Stainless steel versions are available in the 1W nozzle (Part No. 432527) and the 1N nozzle (Part No. 435672).

FUSIBLE LINK

Select correct UL Listed fusible link(s) for installation in detector(s) according to the temperature condition chart below:

SL STYLE

Fusible Link Shipping Assembly Part No.	Temperature Rating	To Be Used Where Temperature Does Not Exceed	Color of Link
439085 (25)	165 °F	100 °F (74 °C)	Black (38 °C)
439086 (25)	212 °F	150 °F (100 °C)	White (66 °C)
439087 (25)	280 °F	225 °F (138 °C)	Blue (107 °C)
439088 (25)	360 °F	290 °F (182 °C)	Red (143 °C)
439089 (25)	450 °F	360 °F (232 °C)	Green (182 °C)



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SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	
SCALE	N/A	SHEET	3 OF 5

RANGE PROTECTION

Range Protection 2-Flow Nozzle

High Proximity Application (2-Flow Nozzle): 40 in. to 50 in. (102 cm to 127 cm) above the cooking surface.

This high proximity application uses the 245 nozzle, Part No. ▶ 419340.

The nozzle tip is stamped with 245 indicating this is a two-flow nozzle and must be counted as two flow numbers.

One 245 nozzle will protect a maximum cooking area of 672 sq. in. (4335 sq. cm) with a maximum longest dimension of 28 in. (71 cm).

When using this nozzle for range protection, the nozzle must be pointed vertically down and positioned as shown in Figures ▶ 29 and 30.

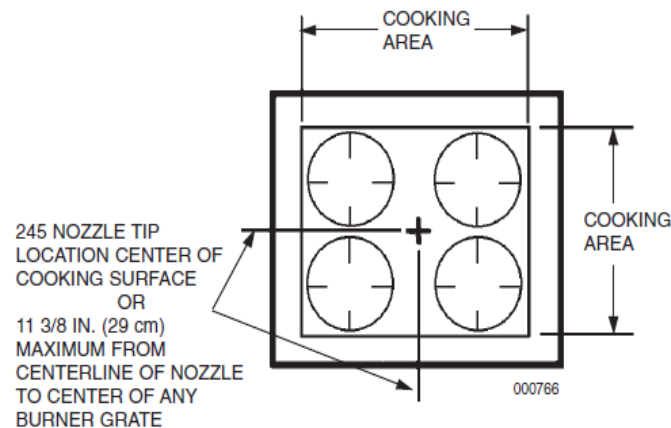
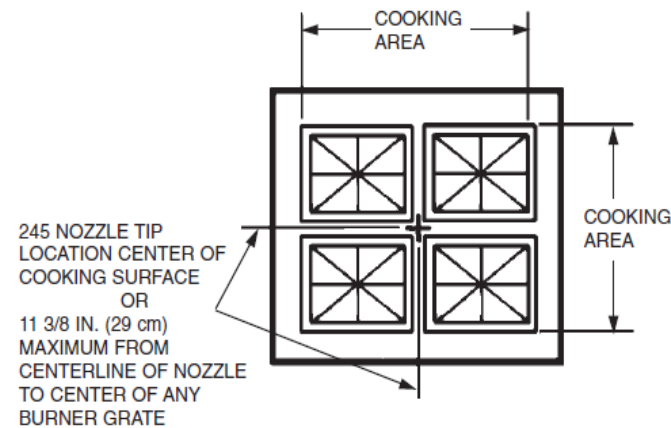
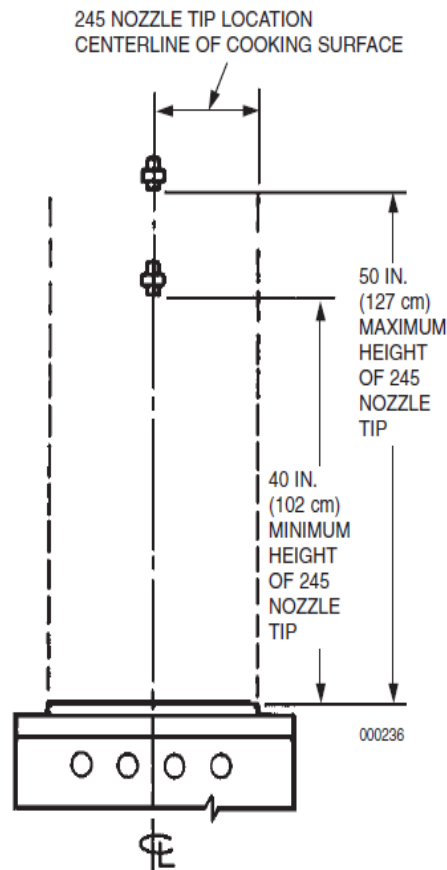



FIGURE 30

EXAMPLE DRAWINGS PROVIDED BY: <http://www.firesystemdrawings.com>

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	SOME RESTAURANT 123 MAIN STREET BREMERTON, WA 98337			
SIZE	FSCM NO	DWG	REV	
		KITCHEN FIRE SYSTEM		
SCALE	N/A	SHEET	4 OF 5	

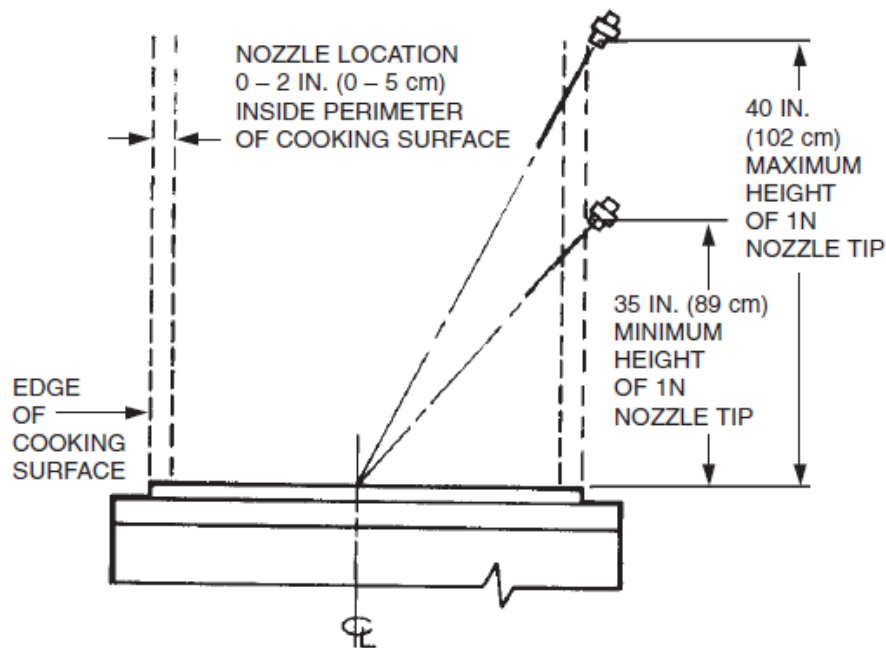
Griddle Protection 1-Flow Nozzle

High Proximity Application: 35 in. to 40 in. (89 to 102 cm) above the cooking surface.

This high proximity application uses the 1N nozzle, Part No. 419335.

The nozzle tip is stamped with 1N indicating this is a one-flow nozzle and must be counted as one flow number.

One 1N nozzle will protect a maximum cooking area of 1080 sq. in. (6968 sq. cm) with the maximum longest side of 36 in. (91 cm).



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SIZE	FSCM NO	DWG	REV
		KITCHEN FIRE SYSTEM	
SCALE	N/A	SHEET	5 OF 5